**Amendments to the Claims**

1. (currently amended) A method for scheduling a plurality of series of packets for transmission between a plurality of terminals in a single wireless channel of a packet-switched local area network, comprising:

assigning a transmission rate to each of a plurality of terminals; ~~and~~

assigning a start tag $S_k^f = \max\{V(A(t_k^f)), F_{k-1}^f\}$ and a finish tag $F_k^f = S_k^f + L_p/(r_f \bullet C_f(t))$ to each packet, where $k$ is a sequence number of the packet, in a particular series of packets $f$, $A(t_k^f)$ is an arrival time of the packet, $L_p$ is a size of the packet in bits, $V(\cdot)$ is a virtual time for the start tag, $r_f$ is a base transmission rate, and $C_f(t)$ is a current transmission rate; and

scheduling the series of packets for transmission between the terminals such that each terminal receives a substantially equal amount of transmission time over an extended period of time.

2. (original) The method of claim 1, in which the local area network operate in an ad hoc mode.

3. (original) The method of claim 1, in which the local area network operates is in an infrastructure mode.

4. (original) The method of claim 1, further comprising:

assigning different transmission rates to the plurality of terminals such that at least one terminal is transmitting at a different rate than all other terminals.

5. (original) The method of claim 1, in which some of the plurality of terminals are mobile.

6. (original) The method of claim 1, in which the assigned transmission rate is dependent on a quality of the channel.

7. (original) The method of claim 6, in which a particular terminal transmitting via an error-free channels is assigned a higher transmission rate than another terminal transmitting via an error-prone channel.

8. (canceled)

9. (currently amended) The method of ~~claim 8~~ claim 1, further comprising:

normalizing the current transmission rate with respect to the base transmission rate.

10. (currently amended) The method of ~~claim 8~~ claim 1, further comprising:

scheduling the particular packet with a smallest start tag to transmit first.

11. (currently amended) The method of claim 1, further comprising:

associating a credit counter $\underline{E_f(t)}$ with each series of packets $f$ such that when $E_f(t) > 0$ the series of packets is leading, and when $E_f(t) < 0$ the series of packets is lagging, where $t$ is a time unit.

12. (currently amended) The method of claim 11, further comprising:

~~increment~~ incrementing the credit counter for a particular leading series of packets by ~~the number~~ a number of time units relinquished by a particular lagging series of packets while decrementing the credit counter of the particular lagging series of packets by the number of time units.

13. (original) The method of claim 12, in which the time units are expressed in terms of transmitted bytes, normalized with respect to the transmission rate.

14. (original) The method of claim 12, further comprising:

relinquishing time units from a selected leading series of packets having a maximum credit counter to lagging series of packets.

15. (original) The method of claim 14, in which the time units are relinquished to the lagging series of packets proportional to normalized credit counters of the lagging series of packets.

16. (original) The method of claim 1, further comprising:

estimating a state of the channel in each terminal to determine whether the terminal schedules packets for transmission.

17. (original) The method of claim 1, in which scheduling mechanism is implemented with a hybrid coordinator according to an IEEE 802.11e standard.

18. (original) A system for scheduling a plurality of series of packets for transmission between a plurality of terminals in a single wireless channel of a packet-switched local area network, comprising:

an error-free service model configured to define ideal packet flows that transmit at different rates over an error-free channel;

a lead and lag model configured to determine leading packet flows and lagging packet flows, and to determine amounts of leading and amounts of lagging for the leading packet flows and the lagging packet flows, respectively; and

a compensation model configured to compensate the lagging packet flows at an expense of the leading packet flows; and

means for scheduling the series of packets for transmission between the terminals such that each terminal receives a substantially equal amount of transmission time over an extended period of time.

19. (original) The system of claim 18, further comprising:

a channel estimation module; and

a channel access module.

20. (currently amended) A system for scheduling a plurality of series of packets for transmission between a plurality of terminals in a single wireless channel of a packet-switched local area network, comprising:

means for assigning a transmission rate to each of a plurality of terminals; ~~and~~

means for assigning a start tag $S_k^f = \max\{V(A(t_k^f)), F_{k-1}^f\}$ and a finish tag $F_k^f = S_k^f + L_p/(r_f \bullet C_f(t))$ to each packet, where $k$ is a sequence number of the

packet, in a particular series of packets $f$, $A(t_k^f)$ is an arrival time of the packet, $L_p$ is a size of the packet in bits, $V(\cdot)$ is a virtual time for the start tag, $r_f$ is a base transmission rate, and $C_f(t)$ is a current transmission rate; and

means for scheduling the series of packets for transmission between the terminals such that each terminal receives a substantially equal amount of transmission time over an extended period of time.